



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,913	09/15/2003	Jiann-Chen Chen	N81438/LPK	1253
1333 7590 10/15/2007 EASTMAN KODAK COMPANY PATENT LEGAL STAFF 343 STATE STREET ROCHESTER, NY 14650-2201			EXAMINER TSOY, ELENA	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 10/15/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/662,913

Applicant(s)

CHEN ET AL.

Examiner

Elena Tsoy

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 6, 8-11 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 8-11, 14 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 18, 2007 has been entered.

Response to Amendment

Amendment filed on August 21, 2007 has been entered. Claims 4, 7, 12, 13, 19, 20 have been cancelled. Claims 1-3, 5-6, and 8-11, 14-18 are pending in the application. Claim 15 is withdrawn from consideration as directed to a non-elected invention.

Specification

Objection to the amendment to the Specification and Abstract filed April 20, 2007 has been withdrawn due to amendment.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-3, 5-6, 8-11, 14 and 16-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Art Unit: 1762

Claim 1 recites a limitation “curing the topcoat layer at a temperature of 275⁰C or more”, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention because there is no upper limitation of curing temperature, i.e. the topcoat layer may be cured at a temperature of 1,000,000 ⁰C or more?

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Rejection of claims 17 and 18 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn due to amendment.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5-6, 8-11, 14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' admitted prior art in view of Weber et al (US 5,750,160).

The specification as originally filed (page 5, lines 1-15) and original claim 19 state, “In a method for producing a replaceable fuser member, adapted to be positioned on a machine mandrel in a fuser system of a electrophotographic machine to function as a roller in the electrophotographic machine by mounting a high temperature nickel sleeve on a mandrel

Art Unit: 1762

configured to 5 receive the sleeve over the outside of the mandrel including the steps of: applying a coating of a primer comprising a silane coupling agent containing epoxies to the outside of the sleeve; applying a coating of the base cushion elastomer around the outside of the sleeve; curing the base cushion elastomer; machining the coating of the cured base cushion elastomer to a desired thickness; applying a topcoat over the machine coating of the base cushion; curing the topcoat layer and removing the replaceable member from the mandrel; the *improvement* comprising: forming the mandrel of a metal having a coefficient of thermal expansion equal to from about 80 to about 120 percent of the coefficient of thermal expansion of the sleeve in a temperature range from about 20 to about 325°C". It is well settled that drafting a claim in **Jepson** format, as originally filed Claim 19, is taken as an implied admission that the subject matter of the preamble is *the prior art work of another*. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 534 (CCPA 1982) (holding preamble of Jepson-type claim to be admitted prior art where applicant's specification credited another as the inventor of the subject matter of the preamble).

Therefore, Applicants admit that *general* limitations of claimed invention were known in the art before claimed invention except for the *improvement* comprising forming the mandrel of a metal having a coefficient of thermal expansion equal to from about 80 to about 120 percent of the coefficient of thermal expansion of the sleeve in a temperature range from about 20 to about 325°C. In other words, Applicants admits that *only* feature that was not known in the art is *forming the mandrel of a metal having a coefficient of thermal expansion equal to from about 80 to about 120 percent of the coefficient of thermal expansion of the sleeve in a temperature range from about 20 to about 325°C*.

As to Amendment of claim 1, since Applicants admitted that curing the topcoat layer was known in the art, and only feature that was not known in the art was forming the mandrel of a

Art Unit: 1762

metal having a coefficient of thermal expansion equal to from about 80 to about 120 percent of the coefficient of thermal expansion of the sleeve, the Examiner takes official notice that a new limitation "curing the topcoat layer at a temperature of 275°C or more" was also known in the art. In any case, the Examiner takes official notice that it is a common knowledge in the art that curing temperature depends on particular application, a resin material of the topcoat layer, on curing time period, etc. It would be obvious to one of ordinary skill in the art to determine the optimum values of the relevant temperature parameters (including those of claimed invention) in particular application through routine experimentation in the absence of showing of criticality.

Moreover, it could be assumed from the specification as originally filed that the new limitation of claim 1 is described as being not a subject matter of claimed invention (See published application, P37-38, 43).

Weber et al teach that nickel shell formed on aluminum alloy mandrel by nickel vapour deposition tend to warp when cooled because nickel and aluminum have different coefficients of expansion and composites of nickel and aluminum. However, nickel vapour deposition on *steel* mandrels, which have essentially the same coefficient of thermal expansion as nickel, permits the deposition of a nickel shell onto a steel substrate, which is free of distortion such as warping when heated or cooled (See column 1, lines 37-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a mandrel of a material having essentially the same coefficient of thermal expansion as a nickel sleeve e.g. a steel or nickel in a prior art method for producing a replaceable fuser member with the expectation of preventing distortion such as warping when heated or cooled, as taught by Weber et al.

Art Unit: 1762

As to claims 2-3, the specification as filed describes the recited silanes as being commercially available primers (See specification, page 7, line 17-19), i.e. limitations of these dependent claims are not subject matter of claimed invention. Or it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used commercially available claimed epoxy silanes since Chen et al do not limit their teaching to specific epoxy silanes.

As to claims 6, 8, 11, The Examiner takes official notice that limitations of these claims are conventional features of the art, as evidenced by Applicants' specification (See Background of the Invention and P17, 22-30) or it would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant thickness parameters (including those of claimed invention) in Applicants' admitted prior art through routine experimentation in the absence of showing of criticality.

As to claims 9-10, 16-18, The Examiner takes official notice that limitations of these claims are conventional features of the art, as evidenced by Applicants' specification (See Background of the Invention and P17, 22-30).

As to claim 14, Applicants admitted in specification that removing the fuser member (after curing the topcoat layer is complete) by differentially heating the fuser member or by differentially cooling the mandrel is known to those skilled in the art (See published application, P 38).

7. Claims 1-3, 5-6, 8-11, 14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' admitted prior art in view of Weber et al, further in view of Hartley et al (US 4,853,737) and Chen et al (US 5,781,840).

Applicants' admitted prior art in view of Weber et al is applied here for the same reasons as above. Hartley et al and Chen et al are applied as evidence that all claimed limitations were

Art Unit: 1762

known in the art except for matching coefficients of thermal expansion of the sleeve and the mandrel (See paragraph 7 of the Office Action mailed on 10/10/2006).

As to curing temperature of 275°C or more, Hartley et al teach that the curing treatment of the outer layer (claimed topcoat layer applied over the base cushion) is preferably carried out, at least in part, at temperatures of at least 230°C (i.e. includes claimed range of 275°C or more) (See column 8, lines 21-27).

8. Claims 1-3, 5-6, 8-11, 14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' admitted prior art in view of Weber et al/Applicants' admitted prior art in view of Weber et al, further in view of Hartley et al and Chen et al/, and further in view of Badesha et al (US 5,141,788).

The cited prior art is applied here for the same reasons as above. The cited prior art does not expressly teach that the cured base cushion elastomer is machined to desired thickness (Claim 1).

Badesha et al teach that a fuser roll can be made by priming a suitable base member 4 which is a hollow cylinder or core fabricated from any suitable metal such as aluminum, steel, nickel, copper, and the like, having a suitable heating element 6 disposed in the hollow portion thereof (See column 7, lines 7-16) with an epoxy adhesive such as Thixon 300/301 (See column 10, lines 15-18), applying elastomer layer 2 (See Fig. 1; column 7, lines 11-12) including thermoplastic fluoropolymers (See column 8, lines 1-17), curing and post curing for 2 hours at 200°F, two hours at 300°F, two hours at 350°F, two hours at 400°F, sixteen hours at 450°F and **grinding the Viton fluoroelastomer coating to a 3 inch diameter specification (claimed machining to a desired thickness)**, and applying and curing a topcoat layer at 200°C (See column 10, lines 26-45).

Art Unit: 1762

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have ground a cured cushion elastomer layer in the cited prior art to a desired thickness, as taught by Badesha et al.

9. Claims 1-3, 5-6, 8-11, 14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' admitted prior art in view of Weber et al/Applicants' admitted prior art in view of Weber et al, further in view of Hartley et al and Chen et al/, and further in view of Petropoulos et al (US 5021109).

The cited prior art is applied here for the same reasons as above. Petropoulos et al teach that typical mandrel materials include metals such as aluminum, stainless steel, **nickel**, chromium, copper, brass, and the like (See column 5, lines 33-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a nickel mandrel in the cited prior art because Petropoulos et al teach that typical mandrel materials include metals such as aluminum, stainless steel, **nickel**, chromium, copper, brass, and the like.

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' admitted prior art in view of Weber et al/Applicants' admitted prior art in view of Weber et al, further in view of Hartley et al and Chen et al/, and further in view of Mikkelsen (US 6,071,110).

Mikkelsen is applied as evidence that it was known to use difference in coefficient of thermal expansion upon cooling or heating to separate sleeves from mandrels (See column 5, lines 41-49). Obviously, sleeves can be separated from mandrels in the cited prior art upon cooling or heating either a mandrel or sleeve, even though their coefficients of thermal expansion are substantially the same because one would either shrink or expand while another would stay unchanged.

11. Claim 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' admitted prior art in view of Weber et al, further in view of Hartley et al and Chen et al, and further in view of Schlueter, Jr. et al (US 5,995,796).

The cited prior art does not expressly teach that filler is antimony-doped tin oxide. Hartley further teaches that one skilled in the art can compare the release of various cured fluoroelastomers containing the metal oxides to determine the optimum metal oxide or combination thereof and concentrations thereof (See column 6, lines 49-53). Hartley fails to teach that the optimum metal oxide combination contains antimony doped tin oxide; and curing time for the coating composition at temperature.

However, Schlueter, Jr. teaches that antimony doped tin oxides (See column 4, line 7) (optionally) in a combination with other metal oxides such as zinc oxide (See column 4, lines 57-67; column 12, lines 4, 8)) added to a fluoroelastomer/aminosiloxane copolymer allows for a stable resistivity virtually unaffected by changes in relative humidity and temperature and provides optimal conductivity (See column 10, lines 25, 40-68) for the filled copolymer (See column 4, lines 1-67; column 5, lines 1-17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used antimony doped tin oxides in a combination with zinc oxide for filling a fluoroelastomer/aminosiloxane copolymer of Hartley with the expectation of providing the desired stable resistivity and optimal conductivity, as taught by Schlueter, Jr.

Response to Arguments

3. Applicants' arguments filed September 18, 2007 have been fully considered but they are not persuasive.

(A) Applicants argue that Weber et al. is concerned with producing nickel shell molds for doors, window sashes, furniture, cabinet tops, coffins and ornamental drawers (col. 3, lines 10-25) that have a textured surface of wood, leather, cloth and like materials. There is never mention of making a replacable fuser roller member. In fact, the teaching of Weber et al. would not allow one to provide a nickel sleeve. Weber et al. show that one has to make a negative mold of a textured surface with silicone. Thus, Weber et al. do not teach mounting a nickel sleeve on a mandrel and cannot render the present invention obvious. Weber et al. is, therefore, not pertinent art. Furthermore, Weber does not show every step in Applicants claims and the 103 rejection is improper.

The Examiner respectfully disagrees with this argument. Weber et al. is a *secondary* reference (not a primary reference) which is relied upon *only* to show that nickel shell formed on mandrel having essentially the same coefficient of thermal expansion as that of a mandrel, permits the deposition of a nickel shell onto a steel substrate, which is free of distortion such as warping when heated or cooled. In response to applicant's argument that Weber et al. is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Weber et al. is reasonably pertinent to the particular problem (i.e. forming the mandrel of a metal having a coefficient of thermal expansion substantially equal to the coefficient of thermal expansion of the sleeve), with which the applicant was concerned. Therefore, in contrast to Applicants argument, Weber et al. is analogous art.

Art Unit: 1762

(B) Applicants argue that assuming it was possible to provide a sleeve through the nickel deposition process of Weber et al., such a nickel sleeve would not be able to withstand the high temperatures of 275°C or more required to cure the topcoat layer as required by Applicants claims. Weber et al. vapor deposit the nickel at a temperature of 177°C. (col. 3, lines 48-53). Such a layer would not be able to withstand the high temperatures (275°C or more) required in applying coatings for the topcoat layer. It would be impossible to vapor deposit high temperature nickel at 177°C. Thus, the Examiners combination is ineffective and the rejection should be removed.

The Examiner respectfully disagrees with this argument. First of all, a nickel sleeve is **high temperature nickel** sleeve of Applicants' admitted prior art not of a *secondary* reference of Weber et al. As was discussed above, Weber et al. is a *secondary* reference (not a primary reference) which is relied upon *only* to show that nickel shell formed on mandrel having essentially the same coefficient of thermal expansion as that of a mandrel, permits the deposition of a nickel shell onto a steel substrate, which is free of distortion such as warping when heated or cooled. Therefore, in contrast to Applicants argument, the nickel sleeve of Applicants' admitted prior art would be able to withstand the high temperatures of 275°C or more required to cure the cushion layer and topcoat layer, as required by Applicants claims.

(C) Applicants argue that the secondary reference of Hartley et al. does not teach curing a topcoat layer at 275°C or more.

The Examiner respectfully disagrees with this argument. Hartley et al teach that the curing treatment of the outer layer (claimed topcoat layer applied over the base cushion) is preferably carried out, at least in part, at temperatures of **at least 230°C** (i.e. includes claimed range of **275°C or more**) (See column 8, lines 21-27).

Art Unit: 1762

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy, Ph.D.
Primary Examiner
Art Unit 1762

ELENA TSOY
PRIMARY EXAMINER
ETsoy

October 5, 2007